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ABSTRACT

These preliminary data are based on the National Science Foundation's Quick Response Survey of a sample of science and engineering graduate departments in institutions awarding the Ph.D. degree. The sample was designed to indicate with reasonable precision total graduate enrollment in science and engineering as well as major changes that may have occured since 1973 in broad subareas. The statistics cover graduate enrollment at both the master's and doctorate levels. Based on a sample of 360 graduate departments, results indicate: (1) Full-time science and engineering enrollment appears to be increasing for the first time since 1969. (2) The biological sciences were responsible for almost all of the overall increase. (3) A smaller increase seems to have occured in the social sciences, but the other broad areas of science and engineering taken together appear to remain at approximately the same level as in fall 1973. (MJM)

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SCIENCE RESOURCES STUDIES HIGHLIGHTS

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Graduate Enrollment Up in Biological Sciences Fall 1974

These preliminary data are based on NSF's Quick Response Survey of a sample of science and engineering graduate departments in institutions awarding the Ph.D. degree. The sample was designed to indicate with reasonable precision total graduate enrollment in science and engineering as well as major changes that may have occurred since 1973 in broad subareas. The statistics cover graduate enrollment at both the master's and doctorate levels. Since the information pertains only to doctorate-granting institutions and covers only science and engineering enrollment, it should not be interpreted as being representative of total enrollment in all graduate disciplines at all academic institutions. A report based on the total universe of graduate science and engineering enrollment at doctoral institutions will be released later.

- Based on a sample of 360 graduate departments, full-time science and engineering enrollment appears to be increasing for the first time since 1969.
- The biological sciences were responsible for almost all of the overall increase. A smaller increase seems to have occurred in the social sciences, but the other broad areas of science and engineering taken together appear to remain at approximately the same level as fall 1973.

Overview

In fall 1974, full-time graduate science and engineering enrollment was up approximately 4 percent in doctorate-granting institutions. An overall estimate of 171,000 full-time graduate students in the sciences and engineering resulted from the weighted sample data. First-year enrollment on a full-time basis also increased about 4 percent—from about 56,000 in 1973 to about 58,000 in 1974. Full-time students accounted for almost three-fourths of the 235,000 total graduate enrollment; part-time enrollment was about 64,000.

The results of this survey, showing significant increases in the biological sciences, are supported by findings from an earlier survey conducted for NSF by the American Council on Education, which reported that the largest increases in junior-year enrollment from fall 1971 to fall 1972 were in the life sciences and health professions.[1] Also, according to discussions between NSF officials and graduate deans and departmental chairmen, several factors seem to be contributing to the significant increases in the biological sciences. The following were among the most frequently mentioned:

[1] This survey was conducted under a grant sponsored by the National Science Foundation, the National Institutes of Health, and the Office of Education, and was published in *Higher Education Panel Report* No. 12, "Enrollment of Junior-Year Students (1971 and 1972)." Washington, D.C.: American Council on Education, April 23, 1973.

HE 006 140

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Recent college graduates who were unsuccessful in gaining admission to medical school enrolled in graduate programs either to obtain an advanced degree in a related field of study or to enhance their prospects of entering medical school in the future;

Biological sciences are among the fields of study that have of late shown growing appeal among young adults in terms of satisfying their occupational aspirations and their desire to make a contribution to society;

Increasing enrollment patterns in biological sciences at the undergraduate level caused institutions to recruit more graduate students as teaching assistants; and

While not applying solely to biology, it was observed that in certain locales, recent college graduates who were unable to find suitable employment in tight job markets decided to continue their education.

Sample Survey Methodology

The objective of the NSF Quick Response Survey of graduate enrollment was to estimate, with reasonable precision, total 1974 graduate science enrollment as well as large year-to-year changes in the enrollment statistics in certain broad areas of science and engineering. The survey consists of a stratified random sample of 360 science and engineering departments selected from the 6,559 departments included in the 1973 survey. There were 180 strata defined, using the following variables:

> (1) broad area of science, (2) full-time enrollment size class, (3) part-time enrollment size class, (4) type of control (public or private), and (5) detailed field of science.

Two departments were selected at random from each of the 180 strata.

The sample size was purposely limited to allow for intensive followup of all departments that did not respond to the mail questionnaire in a reasonable time, and for checking questionable responses from any of the departments. As a result, responses were received within a two-month period from all departments included in the sample.

Estimates of 1974 enrollment and percent change from 1973 were made for total graduate enrollment plus the five other areas of science indicated in the table. The 95-percent confidence intervals given in the table provide an indication of the level of sampling error of the estimates of percent change.

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Change in full-time graduate enrollment in the sciences and engineering, by area, fall 1973 to fall 1974[1]

Area of science or engineering	Full-time graduate enrollment			Range of percent change at 95 percent confidence level
	1973	1974	Percent change 1973-74	
Total	164,300	171,100	4.1	0.5 to 7.7
Engineering	31,700	31,400	-.8	-9.8 to 8.2
Physical and mathematical sciences	41,200	41,500	.7	-4.2 to 5.6
Life sciences, total	41,000	46,200	12.7	4.2 to 21.2
Biological sciences	29,000	34,000	17.2	6.9 to 27.5
Other life sciences	12,000	12,200	2.1	-13.0 to 17.2
Psychology	14,800	14,600	-.6	-12.0 to 10.8
Social sciences	35,600	37,100	4.4	-3.1 to 11.9

[1] Estimates based on a stratified random sample of 360 graduate departments in institutions awarding Ph.D. degrees in the sciences and engineering.